

Sub F1  
F1

2039. (amended) A method of treating a coal formation in situ, comprising:  
providing heat from one or more heaters positioned in heater wells to at least a portion of the formation;  
allowing the heat to transfer from the one or more heaters to a part of the formation;  
wherein the part of the formation has been selected for heating using a moisture content in the part of the formation, and wherein at least a portion of the part of the formation comprises a moisture content of less than about 15%; and  
producing a mixture from the formation.

Sub F1  
F2

2048. (amended) The method of claim 2039, wherein providing heat from the one or more heaters to at least the portion of the coal formation comprises:  
heating a selected volume ( $V$ ) of the coal formation from the one or more heaters, wherein the formation has an average heat capacity ( $C_v$ ), and wherein the heating pyrolyzes at least some hydrocarbons within the selected volume of the formation; and  
wherein heating energy/day ( $P_{wr}$ ) provided to the selected volume is equal to or less than  $h \cdot V \cdot C_v \cdot \rho_B$ ; wherein  $\rho_B$  is an average formation bulk density, and wherein an average heating rate ( $h$ ) of the selected volume is about 10 °C/day.

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Sub F1

2050. (amended) The method of claim 2039, wherein allowing the heat to transfer to the part of the formation heats the part of the formation to increase a thermal conductivity of at least a portion of the part of the formation to greater than about 0.5 W/(m °C).

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Sub F1

2062. (amended) The method of claim 2039, wherein the produced mixture comprises a non-condensable component, wherein the non-condensable component comprises molecular hydrogen, wherein the molecular hydrogen is greater than about 10 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure, and wherein the molecular hydrogen is less than about 80 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure.

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2072. (amended) The method of claim 2039, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation to greater than about 100 millidarcy.

2073. (amended) The method of claim 2039, wherein allowing the heat to transfer increases a permeability of at least a majority of the part of the formation such that the permeability of the majority of the part is substantially uniform.

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2078. (amended) A method of treating a coal formation in situ, comprising:  
providing heat from one or more heaters positioned in heater wells to a part of the formation;  
allowing the heat to transfer from the one or more heaters to the part of the formation;  
wherein at least a portion of the part of the formation has an initial moisture content of less than about 15%; and  
producing a mixture from the formation.

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2087. (amended) The method of claim 2078, wherein providing heat from the one or more heaters to at least the portion of the coal formation comprises:  
heating a selected volume ( $V$ ) of the coal formation from the one or more heaters, wherein the formation has an average heat capacity ( $C_v$ ), and wherein the heating pyrolyzes at least some hydrocarbons within the selected volume of the formation; and  
wherein heating energy/day ( $P_{wr}$ ) provided to the selected volume is equal to or less than  $h \cdot V \cdot C_v \cdot \rho_B$ ; wherein  $\rho_B$  is an average formation bulk density, and wherein the heating rate ( $h$ ) of the selected volume is about 10 °C/day.

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2089. (amended) The method of claim 2078, wherein allowing the heat to transfer to the part of the formation heats the part of the formation to increase a thermal conductivity of at least a portion of the part of the formation to greater than about 0.5 W/(m °C).

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2101. (amended) The method of claim 2078, wherein the produced mixture comprises a non-condensable component, wherein the non-condensable component comprises molecular

hydrogen, wherein the molecular hydrogen is greater than about 10 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure, and wherein the molecular hydrogen is less than about 80 % by volume of the non-condensable component at 25 °C and one atmosphere absolute pressure.

2111. (amended) The method of claim 2078, wherein allowing the heat to transfer increases a permeability of a majority of the part of the formation to greater than about 100 millidarcy.

2112. (amended) The method of claim 2078, wherein allowing the heat to transfer increases a permeability of at least a majority of the part of the formation such that the permeability of the majority of the part is substantially uniform.

5150. (amended) A method of treating a coal formation in situ, comprising:  
evaluating a moisture content of coal in the coal formation to identify a portion of the coal with a moisture content that is less than about 20%;  
providing heat from one or more heaters positioned in heater wells to the portion to heat the portion so that an average temperature in the portion is above a temperature sufficient to pyrolyze coal in the portion; and  
producing a mixture from the coal formation.

5152. (amended) The method of 5150, wherein providing heat from one or more heaters to the portion comprises providing heat to a portion of the coal identified as having a moisture content that is less than about 15%.

5153. (amended) The method of 5150, wherein providing heat from one or more heaters to the portion comprises providing heat to a portion of the coal identified as having a moisture content that is less than about 10%.